A blend of CLIL and cooperative learning creates a socially constructed learning environment

La combinación de CLIL y de aprendizaje cooperativo para crear un ambiente de aprendizaje construido socialmente

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Abstract
This pilot study highlights an educational innovation underpinned by social constructivism, and presents an approach in which Cooperative Learning in a CLIL context is used to create a socially constructed learning environment. The project was implemented in a private school with the participation of a large heterogeneous class. The approach selected in this work is based on CLIL, a pedagogical tool which integrates language and content instruction in an EFL classroom. The method agrees with the experiential constructivist model unlike the traditional behaviorist model currently used in the school where this project was carried out. A close examination of students' performance in their reading, writing and oral tasks showed an increase in overall language achievement. In essence, learners learned how to learn, became more autonomous, self-directed and intrinsically motivated.
Key Words: CLIL; experiential model; behaviorist model; Cooperative Learning; social constructivism; motivation.

Resumen
Este estudio piloto destaca una innovación educativa que se apoya en el constructivismo social y presenta un método en el cual el aprendizaje cooperativo en un contexto de CLIL está usado para crear un entorno de aprendizaje construido socialmente. El proyecto fue implementado en una escuela privada con la participación de una clase heterogénea numerosa. El método seleccionado en éste trabajo está basado en CLIL, una herramienta pedagógica que integra instrucción del lenguaje y contenido en una clase donde se enseña inglés como lengua extranjera. El método concuerda con el modelo constructivista experiencial, a diferencia del modelo conductista tradicional actualmente usado en la escuela, donde éste proyecto fue llevado a cabo. Un examen riguroso del desempeño de los alumnos en lectura, escritura y tareas orales mostró un incremento notable del lenguaje en general. Esencialmente, los estudiantes aprendieron como aprender, llegaron a ser más autónomos, independientes y más motivados intrínsecamente.
Palabras Claves: AICLE; modelo experiencial; modelo conductista; aprendizaje cooperativo; constructivismo social; motivación.

INTRODUCTION

Most EFL teachers consider that large heterogeneous classes create serious problems that need careful guidance and study. The most critical teaching problems connected with such classes include effective learning for all, materials, participation, interest, discipline, individual awareness, and the correction of written assignments (Ur, 1999). Teachers complain that students cannot learn effectively because they often find that tasks are either too easy or too difficult for them. To make matters worse, materials are not provided for or aimed to all kinds of learners, and the topics these materials deal with contribute to students' boredom. It is observed that only the most confident students take part actively in classroom activities while the remaining inactive students create disruptions. Moreover, teachers are unable to follow individual students' progress given differences in language learning ability, learning styles, motivation, world knowledge, and learning experience. Lastly, teachers are overworked with marking copious written assignments even though most students scarcely pay attention to teachers' feedback.

However, the apparent disadvantages of a large heterogeneous class can be turned into a positive teaching experience through the implementation of Cooperative Learning in a CLIL context. Since teachers of large classes find it difficult to attend to every individual, the students themselves can take a more active role in their learning by teaching and correcting each other and by working together, thus fostering an atmosphere of cooperation (Ur, 1999). According to Sonia Casal (2008), Cooperative Learning may contribute to the enhancement of a CLIL context since it not only facilitates the development of higher order thinking skills, but also provides learners with more opportunities to share knowledge, varied opinions and ideas through social interaction with their peers.

Language educators are challenged to provide more effective ways of learning in order to meet the needs of increasing numbers of EFL learners in classrooms today. The challenge has led to an expansion of teaching approaches that seek to provide effective learning experiences. This work explores the benefits of Cooperative Learning, CLIL benefits for EFL students, as well as benefits of Cooperative Learning in CLIL contexts. The following concepts are also presented: constructivism, social constructivism, social interaction and learning, and behaviorist and constructivist educational models. It also highlights an educational innovation underpinned by social constructivism and presents an approach in which Cooperative Learning in a CLIL context is used to create a socially constructed learning environment.

This work reports a pilot study carried out in an Argentine private secondary school which provided a context where CLIL was implemented throughout an academic year. Despite the fact that English had always been taught as a foreign language in this institution, the students involved in the project had the advantage of having been divided into three groups according to their language level in order to receive instruction in general English. It is worth mentioning that the class selected for this project was made up of learners of all three groups, which were not separated by language proficiency when their content-based class was delivered. In this class, the teacher combined language and content objectives, not just language and subject learning, thus laying a solid foundation for English language learning. A blend of core features of CLIL methodology such as a safe learning environment, active learning, scaffolding and Cooperative Learning in addition to the integration of language and content, led to the creation of a socially constructed CLIL context.

THEORETICAL FRAMEWORK

Benefits of cooperative learning

Casal (2006) indicates that Cooperative Learning "promotes interaction" and facilitates the "development of cognitive and personal growth." Therefore, students' learning, retention and academic achievement improve, and in addition, social skills are developed. However, although students are placed in groups, and expected to use these skills, it does not mean that they will automatically use them. Teachers need to engage students in interactive behaviors and attitudes such as leadership, decision-making, trust-building, communication, negotiation, and clarifying. Second, Casal (2006) suggests that Cooperative Learning addresses individual differences among students, thus catering for diverse learning styles. For example, it benefits those who learn best through social processes, or conversely those who need to be encouraged to cooperate in groups. Finally, the researcher points out that the learner's active role allows the teacher to become a facilitator of learning while students take on more responsibility for their own learning.

CLIL benefits for EFL students

Peeter Mehisto, David Marsh and Maria Jesus Frigols (2007) mention the CLIL triad, and explain how language, content and learning skills are integrated. They also point out the most significant CLIL benefits for students: learning a foreign language faster as students are given the opportunities to lead communication, developing successful life-long learning, and interconnectivity in a global society, raising metacognitive awareness of the way we learn, developing metalinguistic awareness, and fostering creative and critical thinking. It should be noted that CLIL is founded on the principles of cross-curricular teaching according to which, learners' knowledge of a specific content can be transferred to other content areas. Reading comprehension strategies can be applied to understanding content-based material in any area while cause and effect relationships are common in science and social studies. Therefore, cross-curricular teaching helps students both to integrate and transfer knowledge, thus fostering critical thinking (Darn, 2006).

Benefits of cooperative learning in CLIL contexts

Casal (2008) argues that the implementation of Cooperative Learning may be beneficial in CLIL contexts since different learning theories such as Constructivism, Lev Vygotsky's Social Constructivism, and Humanism "have influenced the philosophy of education underlying Cooperative Learning" (p. 3).

Constructivism

Constructivism is a philosophical approach which argues that knowledge is socially constructed rather than having its own independent existence (Nunan, 1999). Social constructivism, a variation of cognitive constructivism, emphasizes the collaborative nature of learning. Vygotsky, an advocate of the latter view, strongly disagreed with Piaget for overlooking the social nature of language and for failing to understand learning as a collaborative process. Vygotsky (1997) is often credited for developing ideas of social constructivism with his zone of proximal development (ZPD) where he gave importance to developing functions rather than to developed

functions or skills that children could already perform. Vygotsky (1997, p.188) said, "What the child can do in cooperation today he can do alone tomorrow."

He believed that the constructivist principle of higher mental functions lie in psychological tools and interpersonal relations—outside the individual. The latter take place through collaboration and dialogic action with others in solving problems, or discussing a subject. Psychological tools are the media through which mind and culture communicate. They involve language, different forms of numeration, mnemonic techniques, signs and symbols, and/or decision making systems (Vygotsky, 1997). Active learning incorporating interpersonal relations and psychological tools may encourage the development of higher order thinking skills.

Social interaction and learning

Most social constructivist models emphasize the need for collaboration among learners in contrast to traditional competitive approaches. Inherent in scaffolding instruction and peer collaboration is Vygotsky's ZPD or potential level of development that the learner is capable of reaching under teachers' guidance or in collaboration with peers. The level of actual development is reached when learners can solve problems independently. Through a process of "scaffolding" a learner can go beyond the limitations of physical maturation until the learning process is ahead of the development process (Vygotsky, 1997). Jerome Bruner (1984) called scaffolding the assistance to the ZPD, and considered it a significant aspect of teaching.

Scaffolding is characterized as a social interaction between teachers and learners which occurs before knowledge is internalized. While teachers support, initiate and sustain interest, students gain confidence. As learners gradually take control of tasks, they become responsible for their own learning, and teachers can remove the scaffolding. Elements of scaffolding include definition of tasks, direct or indirect instruction, sequencing activities, filling the gaps, reinforcing, questioning and exemplification. According to Mehisto et al. (2007):

Scaffolding helps students to access previously acquired learning, to analyze it, to process new information, to create new relational links, and to take their understanding several steps further. Moreover, it helps students to better understand the learning process, to build momentum, to save time and to enjoy short-term wins. It lowers frustration and builds success. In short, scaffolding is a sheltered learning technique that helps students to be emotionally secure, motivates them and provides the building blocks—such as language or background knowledge—needed to do complex work (p.139). Therefore, scaffolding is a powerful instructional tool since it supports individualized instruction, assures that a learner will acquire a desired skill or knowledge, engages learners to learn, and helps students to minimize their effort to search so that they can focus on learning more efficiently.

Diana Laurillard (2002) considers learning as an iterative process involving discursive, adaptive, interactive, and reflexive qualities; the main focus being on teacher-student relationship since academic knowledge becomes known through social interaction between teacher and student. Laurillard's reflections on academic knowledge provide an interesting view about how students can construct knowledge not only through discussion with their peers or through self-directed study. In fact, the role of the teacher is to help students to understand the concepts of a discipline in addition to the rules and conventions for acquiring and validating knowledge within that subject discipline.

Behaviorism

John B. Watson, Ivan Pavlov, and B.F. Skinner played an important role in explaining behaviorism. The early formulations of this academic school were a reaction by Watson against introspective psychologies. According to David Nunan (1995), Skinner, who developed his model from Pavlov's and Watson's work, generalized Pavlov's principles of animal behavior, and applied them to humans. Based on observable changes in behavior, behaviorism operates on a principle of stimulus response and the association between the two. Skinner called "operant conditioning" an external stimulus that causes all behaviors. Behavioral or "operant conditioning" occurs when a response to a stimulus is reinforced. If a reward or reinforcement follows the response to a stimulus, then the response will probably occur in the future. Behaviorism considers that when a behavioral pattern is repeated, it becomes automatic, including instructional practice or reinforcement. Behaviorists characterize learners as being reactive, and give great emphasis to environmental conditions. Effective "reinforcers" for learners are identified; therefore, the most significant factors in behaviorism are how stimuli are arranged, and what consequences will take place in the environment. Behaviorists do not address memory, and transfer is a result of generalization in learning. Peggy Ertmer and Timothy Newby (1993, p.56) state that learning involves "discrimination (recalling facts), generalizations (defining and illustrating concepts), associations (applying explanations), and chaining (automatically performing a specified procedure)." Nevertheless, according to Ertmer & Newby (1993), behaviorism cannot explain higher order skills, or those that involve difficult processing such as language development, problem solving, inferencing, and critical thinking. Behavioral instruction emphasizes the production of observable and measurable outcomes including task analysis, pre-assessment of learners to determine where instruction should begin, emphasis on mastering early steps before moving to more difficult levels of performance, use of reinforcement to influence performance, and practice to strengthen a stimulus–response association.

Behaviorist and constructivist models

Renita Schmidt and Paul Lee Thomas (2009) state the differences between traditional behaviorist practices and progressive constructivist suggestions. In addition, Viljo Kohonen (1992) cited in Nunan (1999), indicates significant differences between a traditional behaviorist model and an experiential constructivist model of education (p. 7). A behaviorist model views learning as transmission of knowledge while experiential constructivists view learning as transformation of knowledge. Whereas the behaviorist model emphasizes teacher's authority, in the constructivist view the teacher is a *learner among learners*. The teacher's role in the behaviorist model provides teacher-centered instruction with learners as passive recipients of information working individually. In contrast, the constructivist model promotes active participation and learning in small groups. Knowledge is presented as "certain" in behaviorist models while experiential education asserts the construction of personal knowledge. In regards to learning experiences, behaviorists stress the knowledge of facts, concepts, and skills with greater focus on content and product while constructivists emphasize process, self-inquiry, as well as social and communicative skills. In the behaviorist model teachers structure learning; however, a constructivist approach focuses on learners and self-directed learning. In behaviorist models motivation is extrinsic and evaluation product-oriented, whereas in constructivist models, motivation is intrinsic and evaluation process-oriented. In sum, these models agree with the

principles of behaviorism and constructivism. In fact, whereas behaviorism focuses on the observable aspects of learning, constructivism is a process in which the learner actively constructs new knowledge based on prior knowledge and experience.

The approach used in this work agrees with social constructivism and with the experiential constructivist model, rooted in humanistic psychology. According to social constructivism, individuals can construct knowledge through social interaction. Humanistic psychology argues that "in order for learning to take place, learners must reconstruct the skills and knowledge for themselves; they cannot simply "receive" these from external sources" (Nunan, 1999, p.5). Humanistic psychology stresses both, the social and interactive nature of learning, as did Vygotsky, and learning how to learn rather than teaching. Finally, these principles show that learning can be best achieved when Cooperative Learning is put into effect. In this study, a blend of CLIL and Cooperative Learning creates a socially constructed EFL classroom.

METHODOLOGY

This pilot study was implemented in a private school in Córdoba, Argentina from March to November 2008 with the participation of 5th Year B, 36 students of the Social Sciences Orientation. This project was replicated in 2009, and although data have not been fully analyzed, preliminary results suggest a strong similarity to the outcomes of the present study. The large group of learners who participated in 2008 had three weekly forty-minute classes of English during which they learned the specific language involved in their orientation. The size of the class, as well as the differences observed regarding language proficiency, cultural background, learning styles in addition to personal interests, led the researcher to experiment with a non-traditional method based on the integration of CLIL in a Cooperative Learning environment. The method selected for this project was in agreement with the experiential constructivist model unlike the traditional behaviorist model currently used in the school. To put the new approach into practice, students engaged in class activities working cooperatively in groups. The methodology used to improve the learning conditions of this large class was action research, which required on the part of the research group management skills and an understanding of group dynamics. To put action research into effect, the researcher devised a series of stages that the groups followed during the class periods.

The key stages of group work developed in the following order: group formation, planning, implementation of plans, completion of tasks, evaluation of performance, and assessment. Except for group formation, during the first stage, students were asked to form small groups of 4-5 students by themselves in order to ensure they worked with people they felt comfortable with. Once they knew who the committed and supportive members of their team were, they had to choose a name and a logo for the group, which contributed to creating a shared identity and a sense of belonging. Group formation was completed at the beginning of the school year, and since the groups were stable, they remained intact until the end of the pilot study, so it was not necessary to repeat this stage every class.

Effective planning meant that the teacher gave clear instructions and objectives about the tasks so that the group understood what they needed to achieve. Delegation of work was also required during the planning stage; therefore, each activity was broken up in smaller sub-tasks and shared with the rest of the group. Each member stated what role he/she was going to have when a task was performed. Finally, the teacher set a realistic deadline to finish the activity.

The implementation of plans meant that the teacher ensured the quality of group work by monitoring the groups, scaffolding and supporting their work and giving feedback. Communication between teacher and students and between group members was essential at this stage. During the completion of tasks stronger groups carried out activities more easily than others. Nevertheless, at this stage weaker groups, who could not conceive their tasks or projects from scratch, needed to revise their work to produce their final version for assessment. After the completion of tasks, the teacher collected all the work that had to be corrected and assessed, and the students evaluated group and individual performance through the writing of journal entries. Sometimes learners preferred to write their journal entries collectively, although on some occasions they did it individually.

Assessment was designed taking into account equity of contribution, cooperative behavior, language development, appropriate time and task management, and responsiveness to feedback. Assessment depended on a careful balance of group work process/product, and marks were either shared with the group or individually obtained. A more efficient system lessened the marking load making the students more responsible for improving each other's assignments.

No sooner were learners organized in groups than they began to collaborate in their reading, writing, and speaking activities connected with the topics related to their orientation. The teacher encouraged them to read and co-author texts together, summarize, give opinions, prepare oral reports, dramatize dialogues, and carry out hands-on projects like creating comic strips, posters and board games, which were exhibited in the School Fair organized at the end of the academic year.

This content-based course dealing with visual arts and communication included the following topics: visual images, functions of images, plastic arts, photography, graphic arts and design, cinema and comics. The textbook was complemented with authentic material that the students found on the Web and with some extra resources borrowed from the school library. The relevance and level of the sources were supervised by the teacher, and students learned that they had to acknowledge them at the end of their written productions in order to avoid plagiarism.

RESULTS

The results of this study focus primarily on how the application of the experiential constructivist paradigm could improve language learning in a large heterogeneous class using cooperative groups that were instructed to work as teams in a CLIL context. A close examination of students' performance in their reading, writing and oral tasks showed an increase in overall language achievement of about 20% by comparing the grades obtained at the beginning and at the end of the project. It should be noted that this percentage constitutes an approximate estimation since data have not been statistically analyzed yet. These preliminary results disagree with Christiane Dalton-Puffer (2007) who believes that CLIL students profit in certain areas of the linguistic competence such as listening and vocabulary rather than in writing or syntax. Moreover, Dalton-Puffer (2007) argues that a CLIL environment does not offer opportunities for writing tasks, which was not the case in this project.

A qualitative analysis of learners' work rendered positive results regarding deeper understanding of texts, increase of vocabulary, awareness of form and content as well as greater fluency and intelligibility to make oral speeches. Except for the increase of vocabulary and fluency, students' improvement in the rest of the dimensions of the linguistic competence, appears to be in opposition to Dalton-Puffer's (2007) view. A significant advancement was noticed with respect to students' development of critical or higher-level thinking. In fact, when

questions were raised in their groups, students were encouraged to give their opinions overtly, to differ from other responses, and to reply to others.

As a result of the creation of this socially constructed environment, Cooperative Learning was successfully achieved for the following reasons. First, the cooperative groups were guided by clearly defined objectives, second, the groups were small enough for everyone to contribute, and third, the purpose of language tasks was understood. In addition, cooperative small groups became a safe place where learners participated actively, where they sometimes became not only their own teachers, but also their peers' teachers, a place where every member was respected and all contributions were valued, and also a place where they learned skills to overcome conflicts when they arose.

This socially constructed classroom was conducive to the growth of interpersonal development. Since students learned to relate to their peers to work together in their projects, students who had difficulty with social skills could benefit from social interaction. Another advantage derived from this powerful learning environment was the increase of opportunities for personal feedback. As there were more exchanges between teacher and students in their small groups, the students received increased personal feedback, which does not often take place in large heterogeneous classes in which teachers apply traditional behaviorist models. Despite criticisms by traditional behaviorist practitioners, neither the active role of the social constructivist teacher nor the value of expert knowledge was undermined. The teacher's role changed to help learners to construct knowledge rather than to reproduce or memorize facts. The teacher encouraged students' creativity by means of activities in which they formulated ideas, made inferences, came to conclusions, and pooled their knowledge in a Cooperative Learning environment. The experiential constructivist model transformed learners from passive recipients into active participants in the learning process. Under the teacher's guidance, learners constructed their knowledge actively rather than just mechanically receiving information from the teacher or the textbook and always building on what they already knew.

Cooperative group learning was noisy, and required the teacher to surrender some control in the classroom in order to create a learner-centered environment. The teacher no longer saw herself as the sole authority in the classroom, so she learned to consider the value of her students' opinions and insights. Contrary to traditional behaviorist educators, the teacher perceived that instead of losing control with the application of this "apparently threatening paradigm," as she explained, she showed confidence in her students.

An important aspect of the students' learning process was their reflection on the activities they performed through the writing of journal entries. They recorded how they felt about their projects, what difficulties they faced, and what activities they preferred. A qualitative analysis of their journal entries also revealed how highly students thought of the new approach and how motivated they felt, which gave evidence of their metacognitive awareness. In agreement with Do Coyle (2006), learners' motivation in this CLIL environment was fostered by a motivated teacher, who conversely motivated learners to work in cooperative groups using relevant content and increased cognitive demands. Motivation became a driving force which empowered learners to perform tasks involving meaningful and demanding content irrespective of their linguistic level (Dornyei, 2001). Furthermore, students sustained motivation because activities were attractive, enjoyable, and stimulating; in addition, teaching strategies built students' self-confidence, and provided encouragement to achieve their goals (Dornyei (2001).

DISCUSSION

Although the results of this pilot study need to be corroborated statistically, it was found that the experiential constructivist model applied in a CLIL context promoted effective learning and overall improvement of language skills in a large heterogeneous class. The latter was shaped as a learning environment that emphasized cooperation and exchange of ideas where learners learned how to learn, became more autonomous, self-directed and intrinsically motivated while the teacher was provided with greater opportunity for innovation and professional development. To shed light on this topic, further research is needed to determine which dimensions of the linguistic competence can be attributed to CLIL. In conclusion, the tendencies shown in the qualitative analysis give evidence of promising quantitative results. Therefore, the study will be replicated in 2010 and 2011 as part of the English Department Project in the Social Sciences Orientation of the school where this work was carried out.

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